

Research article

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A review of *Dichorrhinus* Desbrochers, 1875 (Coleoptera, Curculionidae) with two new species from Greece and Turkey, and from Cyprus

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Abstract. The species of the Eastern Mediterranean genus *Dichorrhinus* Desbrochers, 1875 are reviewed. *D. geiseri* sp. nov. is described from Samos Island (Greece) and Western Turkey, and *D. alziari* sp. nov. is described from Cyprus. *Dichorrhinus korbi* Schilsky, 1911 is redescribed. An illustrated key to the species of *Dichorrhinus* is provided, and new records are presented.

Keywords. Entiminae, Phyllobiini, new species, redescription, taxonomy.

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Introduction

The genus *Dichorrhinus* was described by Desbrochers (1875) with its type species *D. pseudoscythopus* Desbrochers, 1875 from a locality nowadays situated in Lebanon. Presently, *Dichorrhinus* comprises four species: *D. pseudoscythopus* from Lebanon and Syria, *D. creticus* (Faust, 1889) from Crete, Greece, *D. freyi* F. Solari, 1940 from Libya and *D. korbi* Schilsky, 1911 from Turkey. All species are characterised by the unique shape of their rostrum, which has a bright, glabrous and shiny nasal plate.

The genera most similar to *Dichorrhinus*, concerning their habitus and rostrum with a glabrous nasal plate, are *Parascythopus* Desbrochers, 1875 (Phyllobiini) and *Pachyrhinus* Schönherr, 1823 (Polydrusini), where especially *Pachyrhinus lethierryi* (Desbrochers, 1875) can be confused with a *Dichorrhinus* at first sight based on a similar habitus, although the scrobes are laterally open in *Pachyrhinus*. It was Solari (1940) who proposed placing *Dichorrhinus* in Phyllobiini, based on the dorsally open antennal scrobes, followed by Pesarini (1980) and Alonso-Zarazaga & Lyal (1999). The last review of *Dichorrhinus* was included in Pesarini's survey of Phyllobiini (1980). The entirely glabrous and shiny nasal plate of the rostrum allows a reliable separation of *Dichorrhinus* and *Parascythopus* from *Phyllobius* Germar, 1824, and *Dichorrhinus* differs from *Parascythopus* in the broader, roundish scales (piliform and acuminate in *Parascythopus*) and the elevated glabrous surface of the nasal plate, well separated towards the base of the rostrum (not elevated and indistinctly separated in *Parascythopus*).

The present review of *Dichorhinus* was initiated after the collection of new specimens in Greece, Turkey, Syria and Cyprus. The examination of these specimens led to the discovery of *D. geiseri* sp. nov. from Western Turkey and Greece. The comparison of specimens collected in Syria and Cyprus revealed that the latter belong to another unnamed species, *D. alziari* sp. nov., described below. Specimens from Cyprus have generally been regarded as *D. pseudoscythropus*, described by Desbrochers (1875) from Djebel Baalbek in Lebanon (Winkler 1924-1932; Solari 1940; Pesarini 1980; Alziar 1995, 2003, 2012). This series of misidentifications was started by Desbrochers himself (1902a, b), when he provided a redescription of the genus *Dichorhinus* and its type species *D. pseudoscythropus* (1902b: 151-152), indicating “Chypre” as provenance.

Furthermore, a larger series of *Dichorhinus korbi*, collected in Turkey, and the examination of the holotype allowed this species to be redescribed.

Material and methods

Photographs were taken with a 5-megapixel digital camera (Leica DFC 420). Series of images were captured through a binocular microscope (Leica MZ16) and processed through Auto-Montage software (Imagic Image Access, Version 8).

All measurements were taken digitally with the measurement-tool of the above mentioned Auto-Montage software. Body length was measured from the anterior margin of the eye to the apex of the elytra.

Abbreviations

NMB	=	Naturhistorisches Museum Basel
NMBE	=	Naturhistorisches Museum der Burgergemeinde Bern
MFN	=	Museum für Naturkunde, Berlin
SDEI	=	Senckenberg Deutsches Entomologisches Institut, Müncheberg
cGA	=	collection of Gabriel Alziar (France, Cassagnes-Bégonhès)
cJL	=	collection of Jean-Michel Lemaire (France, Contes)
cJP	=	collection of Jean Pelletier (France, Monnaie)
cRB	=	collection of Roman Borovec (Czech Republic, Sloupno)
cSB	=	collection of Stanislav Benedikt (Czech Republic, Plzeň)
cPB	=	collection of Piotr Białooki (Poland, Gdynia)

Labels are cited in full from the top downward, with data from each label enclosed in quotation marks. Labels are cited with original spelling and punctuation. Different labels are separated by double slash marks (//). Additional information is included in square brackets.

Results

Class Hexapoda Blainville, 1816
Order Coleoptera Linné, 1758
Superfamily Curculionoidea Latreille, 1802
Family Curculionidae Latreille, 1802
Subfamily Entiminae Schönherr, 1826
Tribe Phyllobiini Schönherr, 1826
Genus *Dichorhinus* Desbrochers, 1875

Dichorhinus geiseri sp. nov.

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Figs 1C, H, 2A-F, T

Etymology

The new species is dedicated to Michael Geiser (Basel), expert in Prionoceridae and dear colleague. The chance to examine his collection of weevil specimens from Samos-Island initiated the present review.

Type material

Holotype

♂, “Griechenland SAMOS Limnionas env. [environment] 37°41’N/26°37’E M. Geiser leg. 23.III.2008”// “Macchia, Klopfschirm [beating tray]”. Red label: “Holotype *Dichorhinus geiseri* sp. nov. C. Germann des. 2013” (NMBE).

Paratypes

1 ♀, same data as holotype (NMB); 9 ♂♂, 3 ♀♀, “21.05.2007 SW Turkey, Baba Dagi S Fethiye, leg. P. Białooki”; 7 ♂♂, 10 ♀♀, “19.05.2007 SW Turkey, Baba Dagi SW Denizli, leg. P. Białooki”; 4 ♂♂, 3 ♀♀, “23.05.2010 SW Turkey, Mt. 2421m W Ören, SW Acipayam, leg. P. Białooki”; 5 ♂♂, 6 ♀♀, “25.05.2007 SW Turkey, Ak Dagi W Aglasun, S Isparta, leg. P. Białooki” (NMBE, cPB). All 48 paratypes are additionally labelled with red paper: “Paratype *Dichorhinus geiseri* sp. nov. C. Germann des. 2013”.

Description

SIZE. (Without rostrum) males 4.2 mm (3.8-4.7 mm), females 4.7 mm (4.4-5.1 mm).

COLOUR. Body, head and femora dark brown to black; nasal plate, antennae, tips of femora, partly tibiae and all tarsal segments reddish-brown.

HEAD. Eyes strongly convex, protruding, short oval in section. Rostrum about as long as wide, with well separated, glabrous and reddish-brown nasal plate; glossy from rostral dorsum to the scrobes. From there to epistome punctuate-striate. Head and basal half of rostrum with oval, green-metallic scales and long, partly bowed, dark hairs. Antennae reddish brown, apex of scape and club slightly darker. Antennal scape long, bowed and slender, reaching fore margin of pronotum. Apex of scape thickened, three times wider than base. Seven segments of antennal funiculus as follows (L/W): 1: 3.2, 2: 3.5, 3: 2.1, 4th and 5th 1.9, 6: 1.4, 7: 1.5. Club fusiform, long and slender.

PRONOTUM. (L/W): 0.7, transverse, widest in the middle, strongly constricted just before fore margin, sides rounded. Densely and irregularly punctuate on disc, vestiture consisting of oval, metallic green scales and long, dark, bowed hairs.

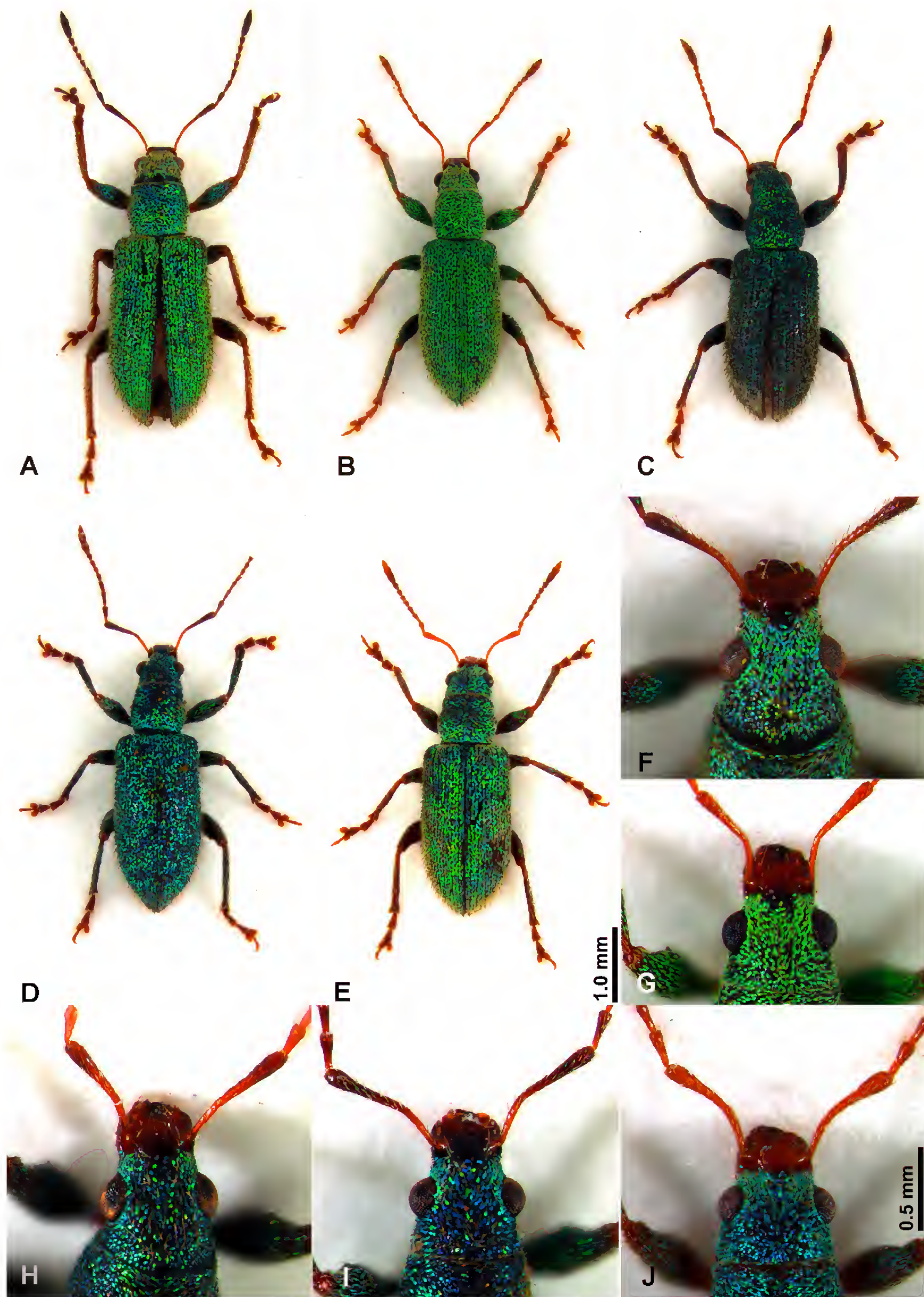


Fig. 1. A-E. Habitus. F-J. Head and antennal scape of *Dichorrhinus* spp., ♂. — A, F. *D. alziari* sp. nov., holotype. — B, G. *D. creticus* (Faust, 1889). — C, H. *D. geiseri* sp. nov., holotype. — D, I. *D. korbi* Schilsky, 1911. — E, J. *D. pseudoscythropus* Desbrochers, 1875.

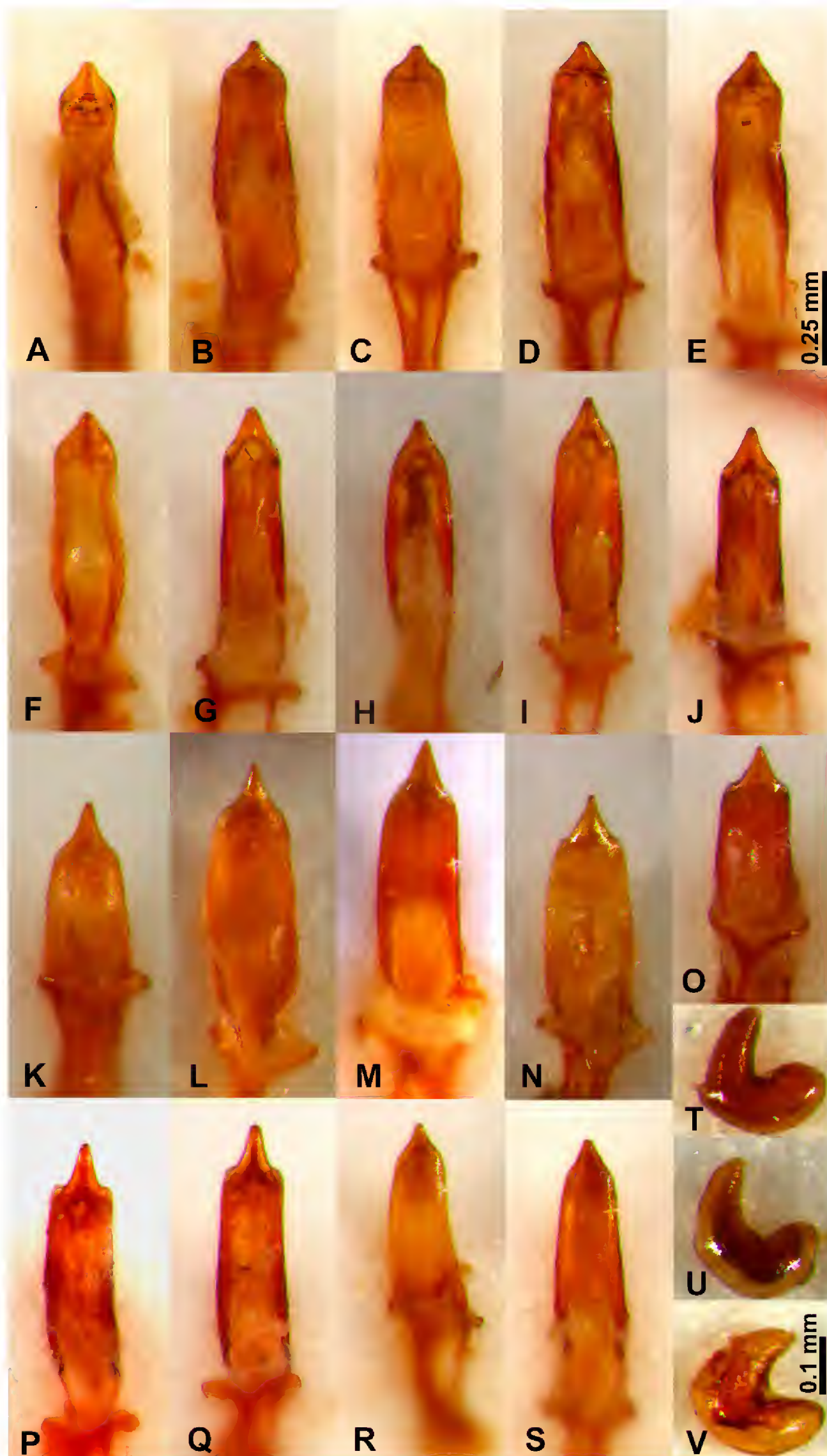


Fig. 2. A-F. Ventral view of aedeagus of *Dichorhynchus geiseri* sp. nov. A. Holotype. B-C. Denizli, Turkey. D-E. Fethyie, Turkey. F. Ören, Turkey. — G-J. Ditto of *D. alziari* sp. nov. G-I. Potami, Cyprus. J. Holotype. — K-O. Ditto of *D. korbi* Schilsky, 1911. K-L. Akseki, Turkey. M. Avlanbeli, Turkey. N. Davras, Turkey. O. Tahtali, Turkey. — P, Q. Ditto of *D. creticus* (Faust, 1889), Crete, Greece. — R-S. Ditto of *D. pseudoscythropus* Desbrochers, 1875, Sinfah, Syria. — T-V. Spermatheca. T. *D. geiseri* sp. nov. U. *D. alziari* sp. nov. V. *D. korbi*, holotype.

ELYTRA. (L/W) male: 1.9, female: 1.7, parallel-sided. Base much wider than pronotum. Shoulders well pronounced. Striae linear and regularly punctuate, interstriae slightly wider. Vestiture consisting of green-metallic, broad, roundish scales, straight cut at hind margin (nearly triangular), and long, semi-raised, dark hairs. Scutellum longer than wide, rounded at tip.

LEGS. All femora strong, with sharp teeth varying in size, tibiae straight. Four visible tarsal segments, 1st segment 1.4 times longer than 2nd, 3rd slightly shorter, about twice as wide, 4th segment tiny and hardly visible, 5th reaching as far as 1st. Claws fused at base, simple.

MALE GENITALIA (Fig. 2A-F). Sides of median lobe of aedeagus sinuate, apex with short and blunt (rounded) tip. Apodeme as long as median lobe. Tegmen with short parameres, tegminal apodeme straight, about half as long as apodeme of aedeagus. Ventricle 8 slightly curved, as long as aedeagus.

FEMALE GENITALIA. Ventricle 8 with very long and slender apodeme. Spermatheca with pointed, almost straight nodulus and strongly curved, globular cornu (Fig. 2T).

SEXUAL DIMORPHISM. Elytra of male parallel, widest at base, elytra pointed towards apex. Elytra of female widest at last third, rounded towards apex.

Host plants

The new species was collected in the phrygana plant association on Samos Island while beating and sweeping (M. Geiser, written communication), and while collecting in Turkey in steppe habitats mostly at higher altitudes (Fig. 3) (P. Białooki, written communication).

Dichorhinus alziari sp. nov.

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Figs 1A, F, 2G-J, U

Etymology

The new species is dedicated to the expert of the Curculionoidea-fauna of Cyprus, the former curator of the Muséum d'Histoire Naturelle de Nice and dear colleague Gabriel Alziar (Cassagnes-Bégonhès).

Type material

Holotype

♂, “sommet du Troodos (Limassol, Chypre), +/- 1900 m ; 10-V-2008” // “sur *Juniperus foetidissima* G. Alziar leg.”. Red label: “Holotype *Dichorhinus alziari* sp. nov. C. Germann des. 2013” (NMBE).

Paratypes

1 ♀, same data as holotype (NMBE); 6 ♂♂, 3 ♀♀ same data as holotype (cGA); 7 ♂♂, 4 ♀♀, “circuit de Madhari (Chypre) 1500-1600 m 10-V-2008: G. Alziar leg.” // “sur *Juniperus excelsa*” (cGA); 3 ♂♂, 2 ♀♀; “chemin du Μαδαρι [Potami] 10 V 08 – 1500m CHYPRE J.M. Lemaire leg.” (cJL); 2 ♂♂, 3 ♀♀, “Cyp. Troodos 1629 m. 24 5 06 S. Doguet” (cJP). All 31 paratypes are additionally labelled with red paper: “Paratype *Dichorhinus alziari* sp. nov. C. Germann des. 2013”.

Description

SIZE. (Without rostrum) males 4.7 mm (4.3-5.0 mm), females 5.1 mm (4.7-5.5 mm).

COLOUR. Body, head and femora dark brown to black; nasal plate, antennae, tips of femora, partly tibiae and all tarsal segments reddish-brown.

HEAD. Eyes strongly convex, protruding, short oval in section. Rostrum about as long as wide, with well separated, glabrous and reddish-brown nasal plate; glossy from rostral dorsum to the scrobes. From there to epistome punctuate-striate. Head and basal half of rostrum with oval, green-metallic scales and long, partly bowed, dark hairs. Antennae reddish brown, apex of scape and club slightly darker. Antennal scape long, bowed and slender, reaching fore margin of pronotum. Apex of scape thickened, three times wider than base. Seven segments of antennal funiculus as follows (L/W): 1: 3.6, 2: 4.8, 3: 3.2, 4: 2.2, 5: 1.9, 6: 1.6, 7: 1.7. Club fusiform, long and slender.

PRONOTUM. (L/W): 0.9, transverse, widest in the middle, strongly constricted just before fore margin, sides rounded. Densely and irregularly punctuate on disc, vestiture consisting of oval, metallic green scales and long, dark, bowed hairs.

ELYTRA. (L/W) male: 2.0, female: 1.9, parallel-sided. Base much wider than pronotum. Shoulders well pronounced. Striae linear and regularly punctuate, interstriae slightly wider. Vestiture consisting of green-metallic, broad, roundish scales, straight cut at hind margin (nearly triangular), and long, semi-raised, dark hairs. Scutellum longer than wide, rounded at tip.

LEGS. Femora not toothed, tibiae straight. Four visible tarsal segments, 1st segment 1.4 times longer than 2nd, 3rd slightly shorter, about twice as wide, 4th segment tiny and hardly visible, 5th reaching as far as 1st. Claws fused at base, simple.

MALE GENITALIA. (Fig. 2G-J) Aedeagus slender, parallel sided to concave, apex obtuse angled and pointed. Apodeme as long as aedeagus. Tegmen with short parameres, tegminal apodeme straight, about half as long as apodeme of aedeagus. Ventricle 8 slightly curved, almost as long as aedeagus.

FEMALE GENITALIA. Ventricle 8 with very long and slender apodeme. Spermatheca with pointed, slightly curved nodulus and strongly curved, globular cornu (Fig. 2U).

SEXUAL DIMORPHISM. See above.

Host plants

Alziar (2012) reported *Juniperus excelsa* and *J. foetidissima* as feeding plants of *D. alziari* sp. nov.

Dichorhinus korbi Schilsky, 1911

Figs 1D, I, 2K-O, V

Dichorhinus korbi Schilsky, 1911: Nr. 54 (description).

not *Phyllobius squamosus korbi* Schilsky, 1908: Nr. 48a [*in* Lona 1936: 491 (World catalogue); and *in* Weill *et al.* 2011 (faunistic list) as *Dichorhinus korbi* Schilsky, 1908 (sic!)]

not *Dichorhinus korbi* – Winkler 1924-1932: 1467 (Palaeartic catalogue). — Solari 1940: 76 (comparison in description). — Pesarini 1980: 206 (survey on Phyllobiini).

Remark

The description of *Phyllobius squamosus korbi* Schilsky, 1908, and the missing entry of the description of *Dichorhinus korbi* in Lona (1936) caused an uncertainty about the year of description of *D. korbi*. However, this is corrected here. The label data (see below) of the holotype of *D. korbi* deposited in the NFM is in accordance with the description (Schilsky 1911). The examination of the holotype specimen, furthermore, revealed that the type is a female specimen, and not a male as written by Schilsky (1911) and repeated by Solari (1940).

Material examined

Holotype

♀, “Amasia [printed]” // “[illegible handwriting]” // “[perhaps a female sign (!), handwritten]” // “Korbi * Schils. [handwritten]”. Red label: “Holotype *Dichorhinus korbi* Schilsky, 1911 ett. Germann 2013” (MFN).

Other material examined

1 ♂, 1 ♀, “TR-Antalya 70km s. Ulupinar 1992.04.30 50m leg. W. Suppantschitsch” (cRB); 1 ♂, 2 ♀♀, “TR –vil Antalya 10.V.2001 Avlanbeli Pass 1120m 25 km S Elmali 3632 N 2959 E – S. Kadlec lgt.” (cSB); 1 ♂, 1 ♀, “26.05.2007 SW Turkey, Davras Dagi E Isparta, leg. P. Białooki” (cPB); 4 ♂♂, 5 ♀♀, “11-12.05.2008 SW Turkey, Akseki env., NE Manavgat, leg. P. Białooki” (cPB); 9 ♂♂, 4 ♀♀, “24.05.2007 SW Turkey, Tahtali Dagi SW Kemer, leg. P. Białooki” (NMBE, cPB).

Redescription

SIZE. (Without rostrum) males 4.5 mm (4.2-4.9 mm), females 4.8 mm (4.6-5.3 mm).

COLOUR. Body, head, femora and tibiae dark brown to black; nasal plate, antennae, tips of femora and basis of tibiae and all tarsal segments reddish-brown.

HEAD. Eyes strongly convex, very protruding, short oval in section. Rostrum about as long as wide, with well separated, glabrous and reddish-brown nasal plate, darkened in the middle; glossy from rostral dorsum to the scrobes. From there to epistome punctuate-striate. Head and basal half of rostrum with oval, green-metallic scales and long, partly bowed, dark hairs. Antennae reddish brown, second half of scape, partly funiculus and club slightly darker. Antennal scape long, bowed and slender, reaching fore margin of pronotum. Apex of scape thickened, three times wider than base. Seven segments of antennal funiculus as follows (L/W): 1: 3.0, 2: 3.8, 3: 2.7, 4th to 6th: 2.0, 7: 1.6. Club fusiform, long and slender.

PRONOTUM. (L/W): 0.7, transverse, widest in the middle, strongly constricted just before fore margin, sides weakly rounded. Densely and irregularly punctuate on disc, vestiture consisting of oval, metallic green scales and long, dark, bowed hairs.

ELYTRA. (L/W) males: 2.1, females: 1.8, parallel-sided. Base much wider than pronotum. Shoulders well pronounced. Striae linear and regularly punctuate, interstriae slightly wider. Vestiture consisting of green-metallic, broad, roundish scales, rounded and partly cut at hind margin, and long, semi-raised, dark hairs. Scutellum longer than wide, rounded at tip.

LEGS. Femora mostly with small, sharp teeth (at least meso- and metafemora). This character shows considerable variation in the examined specimens; teeth can also be completely reduced, tibiae straight. Four visible tarsal segments, 1st segment 1.4 times longer than 2nd, 3rd slightly shorter, about twice as wide, 4th segment tiny and hardly visible, 5th reaching as far as 1st. Claws fused at base, simple.

MALE GENITALIA (Fig. 2K-O). Sides of median lobe of aedeagus parallel, apex with long, triangular and pointed tip. Apodeme as long as median lobe. Tegmen with short parameres, tegminal apodeme straight, about two thirds as long as apodeme of aedeagus. Ventricle 8 slightly curved, little shorter than aedeagus.

FEMALE GENITALIA. Ventricle 8 with very long and slender apodeme. Spermatheca with pointed, broad, curved nodulus and broad, strongly curved cornu (Fig. 2V).

SEXUAL DIMORPHISM. Same as above.

Diagnosis: key to the species of *Dichorhinus* Desbrochers, 1875

1. Elytra with shorter and adherent hairs. Scales on elytra elongate drop-shaped, green or brown to copper metallic, femora unarmed. Libya (Type locality: Cirene)*freyi* F. Solari, 1940
 – Elytra with longer and semi-raised hairs. Scales on elytra more circular, green to greenish-bluish metallic2
2. Head stout, rostrum very short. Eyes smaller, antennae and legs reddish brown and short, femora unarmed (Fig. 1E, J). Aedeagus short, conical, obtuse-angled and pointed at tip (Fig. 2R, S). Syria, Lebanon (Type locality: Djebel Baalbeck)*pseudoscythropus* Desbrochers, 1875
 – Rostrum longer. Eyes bigger and/or more bulged. Antennae and legs longer, at least femora darkened, and mostly at least metafemora toothed (**remark**: no teeth were found on femora of *D. alziari* sp. nov.; in *D. geiseri* sp. nov. there were always teeth varying from small and sharp to well pronounced and strong; in *D. creticus* and *D. korbi* there were all transitions from untoothed to small and sharp, toothed to strongly toothed)3
3. Antennae reddish brown, eyes big, semi-circular, protruding (Fig. 1B, G). Apex of aedeagus with very long spine (Fig. 2P, Q). Greece: Crete Island (= type locality)*creticus* (Faust, 1889)
 – Antennae darkened, eyes otherwise, aedeagus different4
4. Eyes big, less than semi-circular, protruding, head as Fig. 1H. Aedeagus laterally constricted before apex. Apex with short and rounded (blunt) spine (Fig. 2A-F). Western Turkey, Greece: Samos Island (= type locality)*geiseri* sp. nov.
 – Eyes smaller and strongly protruding (almost or distinctly semi-circular). Tip of aedeagus different (Fig. 2G-O)5
5. Eyes protruding, distinctly semi-circular, slightly asymmetrically curved (Fig. 1D, I). Aedeagus broader, laterally slightly rounded, apex acute-angled and pointed (Fig. 2K-O). Turkey (Type locality: Amasia)*korbi* Schilsky, 1911
 – Eyes protruding, less than semi-circular, symmetrically curved (Fig. 1A, F). Aedeagus slender, parallel-sided to concave, apex obtuse-angled and pointed (Fig. 2G-J). Cyprus (Type locality: Troodos Mts)*alziari* sp. nov.

Further records

The seasonally early-appearing species of *Dichorhinus* are rarely collected and published data is scarce. Therefore, I add the following records, registered during examinations for the present study:

***Dichorhinus pseudoscythropus* Desbrochers, 1875**

Dichorhinus pseudoscythropus Desbrochers, 1875: 9 (description).

Material examined

3 ♂♂, 2 ♀♀, “SYRIA bor., 4. Vi. 1999 Jabal al Ansariyah mts. Slinfeh env. (E of Latakia) 1300 – 1600 m a.s.l. S. Benedikt leg.” (cSB, cRB).

Remark

A female syntype is depicted in Stüben *et al.* (2012) with the following label data (taken from photo): “*Dichorhinus pseudoscythro*-pus Desb. [followed by a female sign] Syria: Djebel - Malbeck. Desbr. [handwritten]” (in coll. Heyden, SDEI). After L. Friedman (written communication 2012), the name Malbeck or Naalbec very likely refers to Baalbeck, nowadays a city in Lebanon.

Dichorhinus creticus (Faust, 1889)

Phyllobius creticus Faust, 1889: 92 (description).

Material examined

10 specimens, “GREECE, Crete Island, Chania, E-Chora Sfakion, Gorge, N35°12’22” / E24°07’36”, “140m, 10.4.2012, leg. C. Germann”; 6 specimens, “GREECE, Crete Island, Chania, E-Chora Sfakion, Imbros Gorge, N35°12’35” / E24°10’13”, 170 m, 10.4.2012, leg. C. Germann” (cCG, NMBE).

Dichorhinus freyi F. Solari, 1940

Dichorhinus freyi Solari, 1940: 74-76 (description).

Material examined

Holotype

♂, “Cirene (Lyb.) IV. [19]38, G.Frey” // “Type [red label]” // “*Dichorhinus Freyi* [male sign] holotypus ! m. det. F. Solari” (NMB).

Paratypes

4 ♂♂, 1 ♀, same data as holotype (NMB); 1 ♀, “LIBYA 27.III.2005 Ras El Hilal P. Weill lgt.” (cRB).



Fig. 3. Habitat of *Dichorhinus geiseri* sp. nov. in May in Ören, Turkey at 2421 m. a. s. l. (photo: P. Białooki).

Discussion

Dichorhinus geiseri sp. nov. from Western Turkey and Greece is similar to *D. creticus* based on the big eyes, and to *D. korbi* and *D. alziari* sp. nov. based on the habitus. Concerning the male genitalia, *D. geiseri* is the only species of the genus with a laterally constricted median lobus and a blunt tip. *Dichorhinus alziari* sp. nov. is similar to *D. korbi* based on its habitus; however, the head shape and the tip of the aedeagus are different.

The species *D. creticus*, *D. korbi*, *D. geiseri* sp. nov., and *D. alziari* sp. nov., seem to represent a closer related group (*creticus* species-group) within *Dichorhinus* based on the morphological characters examined, whereas *D. pseudoscythropus*, with a stout head, short and reddish brown antennae and legs, and *D. freyi*, with short and adherent hairs on elytra and an apparent colour dimorphism, stand apart.

The most widespread species are *Dichorhinus korbi*, with seven localities in Turkey, and *D. geiseri* sp. nov., which is presently known from five localities in Greece (Samos Island) and Western Turkey (Fig. 4). Interestingly, their distribution areas overlap in Western Turkey. *D. pseudoscythropus* is known from Syria and Lebanon. *D. alziari* is endemic to Cyprus, *D. creticus* is endemic to Crete Island and *D. freyi* is known from two localities at the coast of Libya.

Some insights into the species' biology as adults can furthermore be provided. *Dichorhinus creticus* was observed in spring (April) on Crete Island (Chora Sfakion) feeding on *Cupressus sempervirens* trees



Fig. 4. Distribution areas of *Dichorhinus* spp. White circle: *Dichorhinus geiseri* sp. nov. Black circle: *Dichorhinus korbi* Schilsky, 1911. Black square: *D. creticus* (Faust, 1889). White square with black circle: *D. alziari* sp. nov. White square: *D. pseudoscythropus* Desbrochers, 1875. Black square with white circle: *D. freyi* Solari, 1840. (Copyright 2012 Google)

(Fig. 5). Alziar (2012) mentions *Juniperus excelsa* and *J. foetidissima* for *Dichorrhinus alziari* sp. nov. on Cyprus, and Białoeki (written communication 2012) collected *D. geiseri* sp. nov. in steppe habitats where Cupressaceae grew (Fig. 3). It is likely that the other species can also be found on similar trees of Cupressaceae.

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Fig. 5. *Dichorrhinus creticus* in April on *Cupressus sempervirens*, Chora Sfakion, 140 m a. s. l., Crete Island, Greece (photo: C. Germann).

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